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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/421,575	10/20/1999	ICHIRO KASAI	15162/00910	4346

24367 7590 12/19/2001

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EXAMINER

CURTIS, CRAIG

ART UNIT PAPER NUMBER

2872

DATE MAILED: 12/19/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/421,575

Applicant(s)

KASAI

Examiner

Craig Curtis

Art Unit

2872



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Oct 1, 2001
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 8-10, 17, and 18 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 11-16 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirements.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some\* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6 20) ☐ Other: \_\_\_\_\_

Art Unit: 2872

## *DETAILED ACTION*

### *Election/Restriction*

1. Upon review of Applicant's response to the Election requirement, the examiner agrees that all claims can be examined together. The Election requirement is hereby withdrawn.

### *Foreign Priority*

2. Receipt is acknowledged of foreign priority papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace (5,355,224).

Art Unit: 2872

Wallace discloses the invention as claimed--a viewing optical system/optical apparatus a viewing optical system, said viewing optical system (Fig. 1A) comprising:

- an objective system (13) for forming on an image surface an image of an object;

- an eyepiece system (32) for enlarging and directing the image to a pupil;

- a hologram combiner (Fig. 4, 72) having an optical power for constructing an equivalent surface (78) which is optically equivalent to the image surface at a different position than the image surface (to left of 78 in Fig. 4) as viewed from the pupil; and

- an information display device (76) for displaying information on the equivalent surface--EXCEPT FOR the additional teaching wherein the hologram combiner transmits light from the image and reflects light from the information display device so that the image can be viewed with the information overlaid thereon. It is noted, however, that Wallace does disclose wherein the hologram combiner reflects light from the image and reflects light from the image and transmits light from the information display device so that the image can be viewed with the information overlaid thereon.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have assembled the system of Wallace such that the hologram combiner transmits light from the image and reflects light from the information display device so that the image can be viewed with the information overlaid thereon, such teaching being notoriously old and well known in the display art, for at least the purpose of allowing for a potentially more compact system geometry.

Art Unit: 2872

4. Claims 8, 9, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace (5,355,224) in view of Swift (G.B. 2 123 974 A).

Wallace discloses the claimed invention as set forth above with respect to claims 1 and 10 EXCEPT FOR the additional explicit teachings wherein said viewing system is a reverse Galileo type optical system, which further comprises a relay lens for inverting the image.

Swift, however, teaches a viewing system of the reverse Galileo type (see abstract) and a relay lens (Fig. 1, lens 20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the viewing system of Wallace such that it be of the reverse Galileo type and have a relay lens, as taught by Swift, for at least the purpose of providing a wider field of view than would be possible in a system that wasn't reverse Galilean, as well as providing proper image parity via the provision of said relay lens.

### *Allowable Subject Matter*

5. Claims 2-7, and 11-16 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2872

### *Reasons for Allowance*

6. The following is an examiner's statement of reasons for allowance:

The claims are allowable over the prior art for at least the reason that the prior art fails to teach or reasonably suggest, with regard to claims 2-6, and 11-15, *a viewing optical system comprising, inter alia, a pentagonal prism for inverting the image, said pentagonal prism having a plurality of surfaces, said hologram combiner being disposed on one of said plurality of surfaces*, with regard to claims 7 and 16, *a viewing optical system comprising, inter alia, an inverting system comprising a first prism and a second prism arranged with a small space therebetween, the small space forming a TIR surface, the hologram combiner being disposed on a second prism side of said TIR surface*, as set forth in the claimed combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 2872

*Contact Information*

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (703) 305-0776. The facsimile phone number for Art Unit 2872 is (703) 308-7721.

Any inquiry of a general nature regarding the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.

*Craig H. Curtis*

Craig H. Curtis  
Group Art Unit  
13 December 2001

*Cassandra Spyrou*  
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